



CHLOROMETHANE

What is CHLOROMETHANE?

Chloromethane is a colorless gas with a faint sweet smell that can only be noticed at potentially toxic levels. Since chloromethane gas is heavier than air, it settles close to the ground, raising the risk level for exposed persons. Also called methyl chloride, this gas catches fire easily.

Chloromethane is usually found in nature but can also be man-made. When grass, wood, charcoal and coal are burned, or when wood rots, chloromethane gas is released into the environment. Factories that use chloromethane can emit this gas.

Where can chloromethane be found and how is it used?

Prior to the wide use of Freon®, chloromethane was often used as a refrigerant to keep things cold, as a foam blowing agent, and as a pesticide or fumigant to kill pests or insects. Working refrigerators more than 30 years old may still have chloromethane in their cooling units. Therefore, such refrigerators could cause high-level exposure. Today, most chloromethane is used to make other chemicals and is found in vinyl chloride end-products. By the end of the manufacturing process, there is no or little chloromethane remaining. It is rarely found as a polluting agent in waste streams from treatment plants and factories.

How can people be exposed to chloromethane?

Contact with liquid chloromethane is rare, but could occur in a factory accident from a broken metal container.

You could be exposed to chloromethane through:

Breathing air containing chloromethane vapor. If you live near a hazardous waste site, this is the most likely way you could be exposed.

Drinking water contaminated with chloromethane. This is unlikely since it exists mostly as a gas or vapor.

Touching liquid chloromethane. This is unlikely since chloromethane quickly turns into a gas at room temperature.

Eye Contact if you get chloromethane vapor into your eyes. This could happen if you work with it at your job.

How does chloromethane work?

When you breathe or drink water containing chloromethane, it enters the bloodstream fast and moves to the liver, kidneys and brain. Most chloromethane leaves in urine or exhaled breath within a few hours or days.

How can chloromethane affect my health?

A person exposed to chloromethane may seem drunk and have sweet breath. They may also have symptoms that are like food poisoning. Liquid chloromethane may cause frostbite if it contacts the skin.

Animal studies showed that animals breathing air with high levels of chloromethane either died or experienced health problems with their livers, kidneys and nervous systems. The animals were exposed to chloromethane levels that were one million times higher than natural levels. The same effects were noted in animals breathing low levels of chloromethane for a long period as in animals breathing high levels during a short period. Animals breathing low levels of chloromethane over a long period grew slower and had brain damage. Some male animals had reproductive problems such as sterility or producing damaged sperm. Females that became pregnant by the exposed males lost their unborn young. Male mice breathing chloromethane for two years developed kidney tumors. However, female mice, and male and female rats, did not develop tumors. It is not known whether chloromethane can cause reproductive problems, birth defects, or cancer in humans.



Frequently Asked Questions

How is chloromethane poisoning treated?

There is no treatment for chloromethane poisoning. A doctor will treat the symptoms.

What should I do if exposed to chloromethane?

If you breathe chloromethane, get fresh air and rest. Get medical attention.

If you get chloromethane on your skin and feel pain similar to frostbite, wash with plenty of water. Do not remove clothes. Get medical attention.

If you get chloromethane in your eyes, remove contact lenses if you can do it easily. Rinse with plenty of water for several minutes. Get medical attention.

If you get chloromethane on your clothes, rinse clothes with plenty of water.

What factors limit use or exposure to chloromethane?

You are most likely to be exposed to chloromethane at work. Safe work methods can limit exposure. Such safety measures include enclosing operations where chloromethane is used, providing fresh air, and venting air away from the site of chemical release. Employees should wear respirators if venting is unavailable. Employees should wear protective clothing and wash right after exposure, as well as again at the end of the work shift.

Have an appliance repair worker check old refrigerators for leaks. If any leaks are detected, the refrigerator should be discarded. Do not use chloromethane near a fire or any heated application, such as welding. Remove leaking cylinders.

Is there a medical test to show whether I've been exposed to chloromethane?

There are no medical tests that can show if you have been exposed to chloromethane.

Technical information for chloromethane

CAS Number: 74-87-3

Chemical Formula: CH_3Cl

Carcinogenicity (EPA): Not classifiable as a human carcinogen.

MCL (Drinking Water): There is no MCL for chloromethane.

OSHA Standards: 100 parts per million of air.

NIOSH Standards: Chloromethane has been designated a potential occupational carcinogen but no numeric standard has been set.

ACGIH: 8 hr. Time Weighted Avg. (TWA): 50 ppm in air

References and Sources

Agency for Toxic Substances and Disease Registry (ATSDR). 1998. *Toxicological profile for Chloromethane*. Atlanta: U.S. Department of Health and Human Services.

<http://www.nsc.org/ehc/chemical/chlorome.htm>

www.epa.gov/ttn/atw/hlthef/methylch.html